1: Washington S-4 (no date) 1956 AF13 Northwest China AF13
Sinkiang AI1

S 592 241 423 0.58 acres per capita as against 0.68 in China Proper. It is difficult to obtain a picture of the land tenure system because of the lack of data. But according to a field survey referred to by Owen Lattimore covering sixty-five households in two villages in the Khotan oasis, the smallest farm was 1.08 acres and the largest farm was eight acres. A further breakdown revealed that S (184) rich peasants in this group had average holdings of eleven acres, middle peasant 5.7, and the poor peasants 2.8 acres. In the area where this survey was conducted, it seems that the farms of the poor were too small for the efficient use of draft animals and there was the problem of efficiently employing, on a tiny farm, the labor potential of the large Uighur family. (Pivot of Asia, p. 169.)

S 311 313 4. Forestry

There is forest land in the rich Ili valley but it is questionable whether much timber can be exploited without serious damage to the soil. Since much of Sinkiang is desert and wasteland there are few forest reserves; out of the total Sinkiang area only about five per cent is forest land.

C. Kansu, Shensi, Ninghsia, and Chinghai

N 133 1. The setting

J. L. Buck refers to this part of the Northwest as the spring 134 wheat and winter wheat-millet area. In the spring wheat area (243) (northern Kansu, Ninghsia, and Shensi) high hills, small mountains, and narrow irrigated valleys characterize the best agricultural land. But along the great wall in Shensi, Ninghsia and Kansu are many undulating sand dunes extending from ten to seventy miles both northward and southward. When the Mongols occupied this region, these dunes were covered with grass and shrubs, but where the Chinese settled here, they cultivated the slightly more fertile land in the depressions between the dunes; once the grass was destroyed the winds blew the sand so as to make farming impossible and other nearby good soil was covered with the blowing sand. Grass in such land can seldom be resodded, and it is thus that land once useful, at least for pasture, is now entirely destroyed.

N 133 134 243 The winter wheat-millet area (southern Kansu, Ninghsia, and Shensi) extends over a great part of a loess-covered plateau, a high, dissected peneplain, carved largely from red or purple sholes and conglomerates, covered with deposits, largely lacustrine, and blanketed by wind-blown dust, known as loess, which varies in thickness from about twenty to more than 150 meters. The fields in this region are very irregular and small, and most of the surface is so eroded that cultivation is difficult and much terracing is necessary.

N 132 The climate is cold, dry, and windy in winter. The typical precipitation is low, about fourteen inches, and exceedingly

132 variable, thus making agriculture hazardous. The growing sea-
(241) son is short, with about five frost free months; even the few crops that can be grown are often injured by autumn frosts. Dark colored
134 chestnut earth is common only on the higher parts of the loess plateau of Shensi and Kansu provinces. It also occurs in the high plateau region of Chinghai Province. In the loess region most of the well-developed dark chestnut earth has been buried under recent loess and alluvial deposits. (T. H. Shen. Agriculture Resources of China, p. 20.)

2. Agriculture

241 Important irrigation systems, made possible by the Yellow
312 River and its tributaries, have been developed in Kansu, Ninghsia, and Shensi. All these irrigated areas except Shensi produce one crop a year, such as wheat, millet, peas, or flax because the growing season is short. The large irrigated plains in Shensi along the Wei River, a tributary of the Yellow River, produce good American upland cotton in addition to wheat, corn, and millet. The largest irrigated area is in the Ninghsia plain where there are twenty-five canals from the Yellow River maintained by the provincial industrial bureau. Irrigation is only possible in the valleys, but they are narrow and comprise but a small percentage of the total cultivated area. When Buck made his survey of this area in 1929-1933, he estimated that thirteen per cent of the total cultivated land was irrigated. He felt that the extent of irrigation sometimes depended upon the prices of agricultural
(651) products fell. Because taxes were still imposed on irrigated land and some of these taxes had even increased, further construction of irrigation works was abandoned until prices commenced to rise again.

137 The vegetation of this region is distinguished by the xerophytic plants, bunch grasses on the high elevation, and the tall and short grass sod. In Chinghai province, the Tsaidam Basin is characterized by desert and weeds, while in the same province, in the vicinity of Kokonor, there is grass. In Kansu, along the foothills and in the mountains, grass and weeds exist while in the desert area of Ninghsia, only weeds grow. Grass grows in Shensi along the Chin-ling and Huang-lung mountain ranges.

241 There is an inadequate amount of green manure crops used in this region, which has resulted in a shortage of organic matter and a deficiency in plant nutrients, especially nitrogen. In most of the
(372) area, straw of rice, wheat, rape, and legumes are not ploughed under but are used for fuel, decreasing an important source of organic matter to the soil and removing minerals necessary for plant growth and crop production. Application of chemical fertilizer in addition to local manures and the plowing under of plant residue is very necessary to soil fertility.

241 311 131 423 The following chart indicates the area of the four separate provinces, the amount of cultivated land, the number of farm households, and the average number of acres per farm. (Cressey, p. 105).

Province	Area in Acres	Cultivated Land	Farm Households	Acres per Farm
Kansu	96,741,133	4,310,000 acres	793,000	5.4
Ninghsia	57,653,372	304,000 acres	54,000	5.6
Shensi	46,432,319	7,514,000 acres	1,385,000	5.4
Chinghai	164,874,016	1,284,000 acres	237,000	5.4
Total	365,700,840	13,412,000	2,469,000	

Of the total area of these four provinces, roughly thirteen per cent is under cultivation (1946 figures). A survey of the National Agricultural Research Bureau findings of 1943 indicates that additional land that could be brought under cultivation is, except for Ninghsia, extremely limited. (China Handbook 1937-1943, p. 547.)

241 311 133 132 The extent of cultivation on the hills of this area depends upon the elevation, steepness, and the dryness of the climate. High elevations have a greater precipitation, more favorable for farming. The drier, steeper hills have sparse, wild vegetation growth only; used for sheep grazing. Although one is impressed with the degree to which such hilly land in this dry climate is cultivated, it is probable that it has extended beyond the most profitable use of the land. In fact, according to one agricultural economist, it might be more economical if more of this land were devoted to grazing; if better varieties of grasses and improved breeds of sheep were introduced, the income derived from pastoral utilization might be greater. (T.H. Shen. Agriculture Resources of China. p. 153.)

241 133 134 Terracing is prevalent and is practiced on eighteen per cent of all cultivated land. Much of the hill land is also cultivated in a modified form of contour farming. The slopes of the fields are so steep and the fields so wide that although there is some attempt at contour farming, it is not well carried out and the erosion is very severe; in fact, erosion is so serious that production is meager and some of the land has been abandoned.

241 The principal crops grown are wheat, cotton, rice in the irrigated areas of Wu-wei and Ninghsia, millet, and Irish potatoes. Cotton production is particularly extensive in Kansu and Shensi. The following figures are from the China Handbook (1937-1943) and they show the acreage and production for 1937-1942.

313 mostly in Kansu. In 1945, large-scale afforestation projects were
[185] undertaken by the provincial government, especially in Ninghsia. The exceptional fact about these projects was that the young seedlings were properly cared for and did not die as so frequently occurred in other afforestation schemes. The Ninghsia projects were, of course, taken over by the Chinese Communists.

311 In the loess plateau region, between the great wall and the
139 mountains, and between the Tibetan Highlands on the West and the Yellow plain to the East, there is almost no forest cover.
313 Forests are found only in the more inaccessible areas or in temple groves. Their disappearance is related partly to needs for lumber but also to the introduction of new crops, such as corn and Irish potatoes, which will grow on the upper slopes. Many hills
[241] were burned over in order to clear the land for a cultivation
[134] which could last for only a few years until erosion swept away the last trace of soil.

5. The border region

*175 In 1937, the Chinese Communists occupied the northern portion
*668 of Shensi as well as the fringe areas of Chinghai, Kansu, and
433 Ninghsia. This region was regarded as the Shensi, Kansu, Ninghsia, Chinghai border region and was developed by the Communists
[437] into a relatively self-sufficient area. When they were able, they exchanged surpluses such as oil, salt, herbs, skin and wool for articles which they could not as yet produce in sufficient quantity.

*175 The Communists carried out land reform as soon as they were
*668 fully entrenched in power. Large land holdings were cut up and
[423] parcelled out to peasants with little or no land. Rents and interest rates were reduced, efforts were made to extend cultivation, increase the number of draft animals, and develop labor cooperation beyond family circles.

*175 In a study by Yung-ying Hsü, issued by the Institute of Pacific
*668 Relations, there is a summary of the economy and military status
433 of this region. There are numerous statistics to indicate increases in production of certain crops. These are the only available statistics we have for the region during this period, and the figures seem to indicate that despite the excessive expenditures for the maintenance of an army and guerilla forces as well as a governing body and administration, progress was made in raising the level of agriculture. However, by 1943, trade figures for the region indicate an imbalance of payments and a drain of currency from the region indicating that increasing military commitments were absorbing the created wealth of the region.

13 D. Conclusion

241 We may sum up the obstacles to agricultural development as
311 follows: geographic and climatic problems are the most serious. The amount of cultivable land that can be reclaimed and used for

3:Cable & French M-5 (1926) 1927
AF13 Northwest China AF13

our roof, after which she was restored to her own family, and, to the lasting credit of the Suchow Chamber of Commerce be it said, their pressure compelled the unwilling official to endow the child with a sum of money, in compensation for the loss of her foot.

So far so good; but that Governor of the Suchow gaol also secretly vowed vengeance on the Christian community and on its leader, against whom he proceeded to work persistently and undeviatingly, until Dr. Kao himself was a prisoner in his hands!

CHAPTER XXI

BEYOND THE GREAT WALL

BEFORE the end of May we revisited Kanchow, this time taking the lower road which, though still boggy, was passable, but before we reached Kaotai we had crossed many swamps and flooded fields. We also met with salt-encrusted friable earth, where at each step the outer crust broke, and our feet sank into the soft soil beneath. Here no single blade of grass can live, not even the desert lizard darts across the track, and the sunshine reflected from the ash-grey ground diffuses a dead and bluish light. Two miles outside the gate of Kanchow city a crowd of Christian men, women and children stood to welcome us. During the past year this community had been subject to serious persecution, which was even now heading up to a crisis, yet the services were crowded, there were many desiring baptism, and before the summer was over ninety-eight men and women confessed Christ publicly. The whole of June was spent instructing these catechumens, but during the month of July we made an expedition to a